

**Exercise 1** Let  $f$  be a function defined by  $f(x) = x^2$  and  $g$  be a function defined by  $g(x) = -5x + 3$ . Use the pair of functions  $f$  and  $g$  to find the following values, if they exist. If the value does not exist, enter DNE.

(a)  $(f + g)(2) = \boxed{-3}$

(b)  $(f - g)(-1) = \boxed{-7}$

(c)  $(g - f)(1) = \boxed{-3}$

(d)  $(f \cdot g)\left(\frac{1}{2}\right) = \boxed{\frac{1}{8}}$

(e)  $\left(\frac{f}{g}\right)(0) = \boxed{0}$

(f)  $\left(\frac{g}{f}\right)(-2) = \boxed{\frac{13}{4}}$